Conclusion: Culprit lesion calcification on angiography is independently associated with adverse clinical outcomes in STEMI patients, irrespective of culprit artery patency, presence of thrombus, age, history of prior MI and disease extent.

1060-84 The Impact of Contemporary Guideline Compliance on Risk Stratification Models for Acute Coronary Syndromes in The Registry of Acute Coronary Syndrome (TRACS)

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Background: Because acute coronary syndromes (ACS) represent a major public health issue, risk stratification models for ACS have been developed to aid physicians in decision-making, directing management and predicting prognosis. This study compares the predictive value of the RUSH Score and the Thrombolysis in Myocardial Infarction (TIMI) Risk Score in an unselected patient population with ACS, and evaluates the impact of compliance with established guidelines on the accuracy of these models. *Methods:* The Registry of Acute Coronary Syndromes (TRACS) is a retrospective registry of 3754 consecutive patients presenting with ACS to the emergency department between April1, 1999 to December 31, 2000 at 9 participating hospital centers (tertiary and community). Patients less than 25 years old (N=8) and with incomplete data (N=1) were excluded. The primary endpoint was all-cause mortality, myocardial infarction (MI) and/or urgent revascularization during hospitalization. RUSH scoring is based on quartiles of predicted risk of cardiac complication (Class I: <2% vs. IV: >15%). The TIMI score was implemented as published. Compliance with current medical treatment recommendations for ACS was assessed using a 4-point scale based on the aggregate use of aspirin, beta-blockers, heparin and glycoprotein IIb/IIIa inhibitors. *Results:* The mean age was 67±14 years, 38% female, 86% Caucasian. 9% died, 6% had a MI, 27% underwent revascularization but in only 1% was it urgent. The primary endpoint rates for TIMI score 0/1, 2, 3, 4, 5 and 6/7 were 11%,14%,13%, 11%,14% and 12% respectively (P=NS). The primary endpoint rates for RUSH class I, II, III and IV were 6%, 8%, 9% and 17% respectively (P<0.001). After controlling for compliance with established guidelines, the gradient of increased by 46% for each unit increase in RUSH class (P<0.001). Adjusting for the RUSH Class, the odds ratio decreased by 54% for each unit increase in compliance (P<0.001).*Conclusions:* The use of established risk scores overestimate event rates in unselected populations. Compliance with the current American College of Cardiology/American Heart Association guidelines significantly improves prognosis regardless of the risk score.

1060-101 Angiographically Apparent Thrombus After Fibrinolytic Administration Is Associated With Impaired Epicardial Flow and Myocardial Perfusion in ST Elevation Myocardial Infarction Patients With Open Arteries

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Background: Residual thrombus following fibrinolytic administration in ST-elevation myocardial infarction (STEMI) may reflect a larger overall thrombotic burden, which may in turn predispose to microembolization and impaired myocardial perfusion.
Methods: We hypothesized that angiographically-evident residual thrombus after fibrinolytic therapy in STEMI patients is associated with worsened indices of epicardial & myocardial perfusion, even in the presence of an open infarct-related epicardial artery. Clinical & angiographic data were analyzed from 929 patients with open arteries (TIMI Flow Grade 2/3 at 60 minutes after fibrinolytic therapy) who were enrolled in the TIMI 14, 20, 23, and 24 trials in STEMI.
Results: Residual thrombus was found in 37.8% of patients (351/929). Baseline characteristics associated with residual thrombus were non-LAD infarct location (72.1% in arteries with thrombus vs. 60.7% in arteries without thrombus, p<0.0001) and a history of hypercholesterolemia (27.6% vs. 21.5%, p=0.03). Residual thrombus was associated with higher Corrected TIMI Frame Counts (CTFC) in the infarct-related artery (43.5 ± 36.2 with thrombus vs. 36.1 ± 23.9 without thrombus, n=907, p=0.0002), impaired microvascular perfusion by TIMI Myocardial Perfusion Grade (57.0% TMPG 2/3 with thrombus vs. 70.0% TMPG 2/3 without thrombus, n=929, p<0.0001), and a trend toward a lower percentage of complete (>70% of baseline) ST-segment resolution (35.6% complete resolution with thrombus vs. 40.3% complete resolution without thrombus, n=722, p<0001). In multivariate regression models that incorporated age, time to treatment, gender, a history of hypercholesterolemia, LAD location, and TIMI Flow Grade, residual thrombus remained independently associated with slower flow by CTFC (p=0.01), impaired TMPG (OR for TMPG 2/3 0.66, p=0.004) and less complete ST-segment resolution (OR for complete resolution 0.71, p=0.038) in patients with an open infarct-related artery.
Conclusion: Angiographically-apparent thrombus after fibrinolytic administration is independently associated with slower epicardial flow and impaired myocardial perfusion, despite a patent epicardial artery.

1060-102 Risk Scores Derived From Clinical Trials Do Not Generalize to Real World Acute Coronary Syndrome Patients: Insights From the Canadian Acute Coronary Syndromes Registry

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Background: Accurate risk assessment can guide clinical decision making in the management of acute coronary syndromes (ACS). Several risk models have been derived from and validated in clinical trials and other selected patient cohorts, but their applicability in the general population remains unclear.
Methods: In the prospective, observational Canadian ACS Registry, 4627 patients with ACS were enrolled from 51 centres. Baseline patient data were recorded on standard case report forms. We evaluated the risk models derived from the Platelet glycoprotein IIb/IIIa in Unstable angina: Receptor Suppression Using Integrilin Therapy (PURSUIT) and the Global Registry of Acute Cardiac Events (GRACE) predicting in-hospital death among patients with non-ST elevation (NSTE) ACS. Model discrimination was measured by the c statistic which represents the area under the receiver operating characteristic (ROC) curve. Calibration was assessed by the Hosmer-Lemeshow goodness-of-fit test, where a low probability value indicates lack of fit.
Results: In-hospital mortality rates were 2.4% overall and 1.5% among the NSTE ACS patients (N=2925; 63.2%) in our validation cohort. Both the PURSUIT and GRACE risk models showed similar and good prognostic discrimination (c statistics= 0.84 and 0.83, respectively; P=0.69 for difference). The GRACE model showed good calibration (Hosmer-Lemeshow P=0.40). In contrast, calibration in the PURSUIT model was poor (Hosmer-Lemeshow P<0.001) with consistent over-estimation of risks. Performance of the GRACE model was similar when ST-elevation ACS patients were included.
Conclusions: Both the PURSUIT and GRACE models demonstrated good discrimination for in-hospital mortality in the Canadian ACS Registry. However, the GRACE risk model, derived from a less selected population, provided superior calibration in risk assessment across the spectrum of ACS. Our findings underscore the importance of risk model validation in the general population to establish its generalizability before integration into clinical practice.

POSTER SESSION

1061

New Observations From Acute Myocardial Intervention Trials II

Monday, March 08, 2004, 9:00 a.m.-11:00 a.m.
Morial Convention Center, Hall G
Presentation Hour: 9:00 a.m.-10:00 a.m.

1061-85 Trends in the Use of Effective Cardiac Medications in Patients With Acute Myocardial Infarction: The GRACE Experience

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Background There are increasing data supporting the routine use of certain effective medications in the treatment of patients with acute myocardial infarction (AMI). However, few data are available describing recent, as well as temporal, trends in utilization rates of these medications in patients with AMI. Moreover, few contemporary data are available from a multinational multicenter perspective.
Methods To examine recent (2000-2002) patterns in the use of effective cardiac medications, we examined data from 15,972 patients hospitalized with AMI at 94 hospitals in 14 countries included in the Global Registry of Acute Coronary Events (GRACE). The four medications examined include aspirin, beta blockers, ACE inhibitors, and lipid-lowering agents.
Results Overall, 1.5% of patients did not receive any of these 4 medications during the acute hospitalization, 6.2% received only 1 treatment modality, 21.7% received any 2 medications, 38.6% received any 3 medications, and 32.0% received all 4 cardiac medications. There was a marked increase over time in the proportion of patients receiving all 4 medications during their index hospitalization (23.5% in 2000, n=7196; 40.7% in 2002, n=6919). The most marked increases in the prescribing of these effective cardiac medications over time were noted for lipid-lowering agents (17% relative increase) followed by increases in ACE inhibitors (10%). Use of aspirin and beta blockers remained relatively stable during the periods examined. Increases in the prescribing of all 4 medications over time were observed in various demographic and clinically defined subgroups. In addition, there were marked increases over time in the prescribing of multiple cardiac medications to patients in the different GRACE strata of low, moderate, and high risk.
Conclusion The results of this large multinational observational study provide insights into changing prescribing patterns in the hospital management of AMI. Despite encouraging increases in the use of combinations of effective cardiac therapies, considerable opportunities for increased utilization remain.